IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application	: **09/975,382**
Applicant(s)	: **van der VLEUTEN et al.**
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Title: **CODING**

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Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL UNDER 37 CFR 41.37

Sir:

This is an appeal from the decision of the Examiner dated 19 March 2007, finally rejecting claims 1-19 of the subject application.

This paper includes (each beginning on a separate sheet):

1. **Appeal Brief;**
2. **Claims Appendix;**
3. **Evidence Appendix; and**
4. **Related Proceedings Appendix.**

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The above-identified application is assigned, in its entirety, to **Koninklijke Philips Electronics N. V.**

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 20 is canceled.

Claims 1-19 are pending in the application.

Claims 1-19 stand rejected by the Examiner under 35 U.S.C. 103(a).

These rejected claims are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection in the Office Action dated 19 March 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

This invention addresses the coding of objects using scalable compression, wherein the encoded bit stream may be truncated at select points while the remaining stream can still be decoded. In this manner, the same bit stream serves channels with different capabilities without the need to re-encode the original data (Applicants' specification, page 1, lines 4-16). In an example embodiment, to facilitate the selection of when to truncate the encoded bit stream, quality information is added to the encoded bit-stream, indicating a measure of the distortion that will be produced if the bit stream is truncated at the corresponding truncation point (page 2, lines 1-11;

121 of FIG. 1). The characteristics of each object that is encoded will determine the amount of distortion produced by truncating the scalable encoding; a plane object or interior scene will generally exhibit substantially less distortion than a complex object or outdoor scene under identical encoding conditions. This differential rate-distortion curve for different objects is easy to determine during encoding, but difficult or impossible to determine when only the encoded bit stream is available (page 2, lines 26-34). Using the quality information, devices that need to truncate the encoded bit stream due to bandwidth or processing limitations can do so in a manner that assures consistent quality (page 5, lines 1-9; 4 of FIG. 1).

As claimed in independent claim 1, an embodiment of the invention comprises a method of coding a multi-media object, the method comprising (FIG. 1):

coding (120) the object to obtain a bit-stream having multiple coded parts, each coded part including a header and a data part (page 3, lines 12-15; page 4, lines 28-29),

generating quality information (121) that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream (page 2, lines 10-11; page 3, lines 15-17; page 4, lines 29-31), and

adding the quality information into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream (page 3, lines 15-17; page 4, lines 31-33).

As claimed in independent claim 9, an embodiment of the invention comprises a method of controlling at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream (page 3, lines 12-17), the method comprising (FIG. 1):

receiving (3) the at least one bit-stream (page 5, lines 1-3),

extracting (4) the quality information from the headers of the coded parts of the bit-stream (page 3, lines 15-17; page 5, lines 1-3),

transcoding or truncating (3) the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream (page 5, lines 3-6 and 12-17; page 6, lines 16-20 and 26-31),

providing (3) the at least one bit-stream at the desired combination of bit-rate and distortion (page 5, lines 3-4), and

processing (5) the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point (page 5, lines 3-8).

As claimed in independent claim 10, an embodiment of the invention comprises a method of transmitting at least one multi-media object using a transmitter that generates and transmits a bit-stream that is subsequently reproducible by a reproduction unit or decoder to obtain the multi-media object, the method comprising (FIG. 1):

coding (120) the object to obtain the bit-stream having multiple coded parts, each coded part including a header and a data part (page 3, lines 12-15; page 4, lines 28-29),

generating (121) quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream (page 2, lines 10-11; page 3, lines 15-17; page 4, lines 29-31),

adding (120) the quality information into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream (page 3, lines 15-17; page 4, lines 31-33), and

transmitting (11) the bit-stream in which the quality information has been added (page 4, lines 25-27).

As claimed in independent claim 11, an embodiment of the invention comprises a method of receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream (page 3, lines 12-17), the method comprising (FIG. 1):

extracting (4) the quality information from the headers of the coded parts of the bit-stream (page 3, lines 15-17; page 5, lines 1-3),

transcoding or truncating (3) the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream (page 5, lines 3-6 and 12-17; page 6, lines 16-20 and 26-31),

providing (3) the at least one bit-stream at the desired combination of bit-rate and distortion (page 5, lines 3-4),

decoding (5) the at least one bit-stream at the desired combination of bit-rate and distortion (page 5, lines 3-8), and

processing (3,5) the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point (page 5, lines 3-8).

As claimed in independent claim 12, an embodiment of the invention comprises a method of receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts and enabling the multi-media object to be reproduced by a reproduction unit, the quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation (page 3, lines 12-17), the method comprising (FIG. 1):

extracting (4) the quality information from the headers of the coded parts of the bit-stream (page 3, lines 15-17; page 5, lines 1-3);

decoding (5) the bit-stream to obtain a decoded multi-media object (page 5, lines 3-8); and

processing (5) the multi-media object in dependence on the extracted quality information obtained from the header of one or more coded parts of the bit-stream whereby the processed multi-media object is reproducible by the reproduction unit (page 5, lines 3-8).

As claimed in independent claim 13, an embodiment of the invention comprises a device for coding a multi-media object, the device comprising (FIG. 1):

means for coding (120) the object to obtain a bit-stream having multiple coded parts, each coded part including a header and a data part (page 3, lines 12-15; page 4, lines 28-29),

means for generating (121) quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream (page 2, lines 10-11; page 3, lines 15-17; page 4, lines 29-31), and

means for adding the quality information (120) into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream (page 3, lines 15-17; page 4, lines 31-33).

As claimed in independent claim 15, an embodiment of the invention comprises a controller for controlling at least one bit-stream representing a multi-media object in which bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream (page 3, lines 12-17), the controller comprising (FIG. 1):

means for receiving (3) the at least one bit-stream (page 5, lines 1-3),

means for extracting (4) the quality information from the headers of the coded parts of the bit-stream (page 3, lines 15-17; page 5, lines 1-3),

means for truncating (3) the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream (page 5, lines 3-6 and 12-17; page 6, lines 16-20 and 26-31),

means for providing (3) the at least one bit-stream at the desired combination of bit-rate and distortion (page 5, lines 3-4), and

means for processing (5) the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point (page 5, lines 3-8).

As claimed in independent claim 17, an embodiment of the invention comprises a receiver for receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation (page 3, lines 12-17), the receiver comprising (FIG. 1):

means for extracting (4) the quality information from the headers of the coded parts of the bit-stream (page 3, lines 15-17; page 5, lines 1-3);

means for decoding (5) the bit-stream to obtain a decoded multi-media object (page 5, lines 3-8); and

means for processing (3, 5) the multi-media object in dependence on the extracted quality information obtained from the header of one or more coded parts of the bit-stream (page 5, lines 3-8).

As claimed in independent claim 19, an embodiment of the invention comprises a computer readable storage medium including a bit-stream representing a multimedia object in which bit-stream quality information has been added, the bit-stream having multiple coded parts generated and transmitted by a transmitter (11 of FIG. 1; page 3, lines 12-17; page 4, lines 28-33) and subsequently processable to enable reproduction of the multi-media object by a reproduction unit, each coded part

having a header and a data part, the quality information indicating distortion of the object when the bit-stream is truncated during decoding thereof in relation to the data parts of the coded parts of the bit-stream, the quality information being present in the header of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream (3-5 of FIG. 1; page 3, lines 15-17; page 5, lines 1-8).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-3, 5-7, 9-11, 13-16, and 18-19 stand rejected under 35 U.S.C. 103(a) over Park et al. (USP 6,148,288, hereinafter Park), Nishiwaki et al. (USP 5,892,848, hereinafter Nishiwaki), and Simon et al. (USP 4,918,523, hereinafter Simon).

Claim 4 stands rejected under 35 U.S.C. 103(a) over Park, Nishiwaki, Simon, and Shin et al. (USP 6,493,387, hereinafter Shin).

Claim 8 stands rejected under 35 U.S.C. 103(a) over Park, Nishiwaki, Simon, and Girod et al. (USP 5,809,139, hereinafter Girod).

Claims 12 and 17 stand rejected under 35 U.S.C. 103(a) over Park and Nishiwaki.

VII. ARGUMENT

Claims 1-3, 5-7, 9-11, 13-16, and 18-19 stand rejected under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon.

MPEP 2142 states:

> "To establish a *prima facie* case of obviousness … the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***… If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

Claims 1-3 and 5-7

Claim 1, upon which claims 2-8 depend, claims a method that includes generating quality information that indicates distortion of the object when a bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream.

Neither Park, nor Nishiwaki, nor Simon, individually or collectively, teaches or suggests generating quality information that indicates distortion of the object when a bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream.

The Office action asserts that Park teaches generating quality information that indicates distortion of the object at column 3, lines 44-47. The applicants respectfully disagree with this assertion. At the cited text, Park teaches:

> "The coding steps (b), (c) and (d) are performed on side information having at least quantization step size information and quantization bit information allotted to each band, by a predetermined coding method." (Park, column 3, lines 44-47.)

Park also teaches:

> "the steps (b), (c) and (d) each comprise the steps of: (e) representing the quantized data corresponding to a layer to be coded by digits of a predetermined same number; and (f) coding the most significant digit sequences composed of most significant digits of the magnitude data composing the represented digital data." (Park, column 3, lines 36-40.)

Despite the Office action's assertions, the cited text of Park does not teach generating quality information that indicates distortion of an object. A thorough examination of Park fails to reveal where Park teaches quality information that

indicates distortion of the object when the bit-stream is truncated during decoding, and specifically, nowhere does Park teach or suggest quality information that indicates distortion of the object when a bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream, as claimed in claim 1.

As taught by the applicant, the distortion of an object when a bit stream is truncated is dependent upon the differential rate-distortion curve for each different object (Applicants' page 2, lines 26-34). As is well known in the art, given the same encoding parameters, including the same quantization step size, different objects will experience different amounts of distortion. Given the same quantization step size, a plain object or scene will exhibit substantially less distortion than a complex object or scene. Knowledge of the quantization step size is insufficient to determine or estimate distortion of an object when a bit-stream is truncated during decoding.

MPEP 2143 states:

> If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

The intended purpose of the applicants' claimed invention is to facilitate providing a decoding of substantially uniform quality/distortion by including a measure of the distortion that will occur when a bit stream is truncated during decoding. Using Park's quantization step-size information as a measure of distortion will not provide substantially uniform quality, because each object's differential rate-distortion curve will determine the distortion that will occur when the quantization-step-size truncated bit stream is decoded. If, as suggested in the Office action, Park's quantization step-size information is used to select when truncation will occur, then when the truncated video or audio content material is rendered, complex images or sounds will be substantially more distorted than plain images or sounds, and will be generally unsatisfactory for the intended purpose of providing substantially uniform quality.

Additionally, the combination of Park, Nishiwaki, and Simon is not apparent, and the Office action fails to identify any apparent reason that one of skill in the art would consider attempting to combine these references.

In KSR Int'l. Co. v. Teleflex, Inc., the Supreme Court noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed:

> "Often, it will be necessary … to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**." KSR, slip op. at 14 (emphasis added).

Park teaches a method and system for scalable audio coding/decoding. Simon teaches using variable quantization based on the number of pixels within encoded image regions. Other than finding matching words from the applicants' claim in each of these references, the Office action provides no apparent reason why one of skill in the art would consider combining these references, other than the assertion that "one would have been motivated to control the magnitude of bitstreams and the complexity of a decoder". This asserted rationale has no bearing on the proposed combination. Including quality information in an encoding is unrelated to controlling a magnitude of the bitstream. Although the applicants' invention will affect the complexity of a decoder, the asserted combination of Park and Simon will not, per se, affect the complexity of a decoder, because it is not clear how a combination of a scalable audio encoder/decoder and a system that varies quantization based on the number of pixels in an image region will affect the complexity of a (video? audio? audio-video?) decoder.

Because the combination of Park, Nishiwaki, and Simon fails to teach the elements of claim 1, and because the combination of Park, Nishiwaki, and Simon fails to satisfy the intended purpose of the combination, and because there is no apparent reason to combine Park, Nishiwaki, and Simon, the applicants respectfully

maintain that the rejection of claims 1-3 and 5-7 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, MPEP 2143, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 9

Claim 9 claims a method that includes extracting quality information from a bit-stream and transcoding or truncating the bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon.

Additionally, the Office action fails to identify where either Park, Nishiwaki, or Simon, individually or collectively, teaches or suggests extracting quality information from a bit-stream and transcoding or truncating the bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream, as specifically claimed in claim 9.

Because the Office action has failed to establish a prima facie case to support this rejection, the applicants respectfully maintain that the rejection of claim 9 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 10

Claim 10 claims a method that includes generating quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon; the asserted combination of Park, Nishiwaki, and Simon fails to teach

generating quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream; and the asserted combination of Park, Nishiwaki, and Simon does not satisfy the intended purpose of the combination. Accordingly, the applicants respectfully maintain that the rejection of claim 10 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, MPEP 2143, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 11

Claim 11 claims a method that includes transcoding or truncating the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream, and decoding the at least one bit-stream at the desired combination of bit-rate and distortion.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon, and the Office action fails to identify where the combination of Park, Nishiwaki and Simon teaches or suggests transcoding or truncating the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream, and thus the Office action fails to establish a prima facie case to support this rejection.

In addition, the Office action asserts that Park teaches decoding the bit-stream at a desired combination of bit-rate and distortion at column 13, lines 35-38 and 53-60. For convenience, the cited text follows:

> "The decoding process will be briefly described. First, among the side information of the base layer, the quantization bit information of each quantizing band is decoded." (Park, column 13, lines 35-38.)
> "After completing decoding of the bitstreams for base layer, the side information and quantized values of audio data for the next layer are decoded. In such a manner, data of all layers can be decoded. The data quantized through the decoding process is restored as the original signals through the inverse quantizing portion 410 and the frequency/time mapping

> portion 420 shown in FIG. 4, in the reverse order of the coding." (Park, column 13, lines 53-60.)

As can be seen, contrary to the Office action's assertion, the cited text fails to address decoding the bit-stream at a desired combination of bit-rate and distortion.

Because the Office action has failed to establish a prima facie case to support this rejection, the applicants respectfully maintain that the rejection of claim 11 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claims 13-14

Claim 13, upon which claim 14 depends, claims a device that includes means for generating quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon; the asserted combination of Park, Nishiwaki, and Simon fails to teach generating quality information that indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream; and the asserted combination of Park, Nishiwaki, and Simon does not satisfy the intended purpose of the combination. Accordingly, the applicants respectfully maintain that the rejection of claims 13 and 14 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, MPEP 2143, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 15-16 and 18

Claim 15, upon which claims 16 and 18 depend, claims a controller that includes means for truncating the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon, and the Office action fails to identify where the combination of Park, Nishiwaki and Simon teaches or suggests transcoding or truncating the at least one bit-stream in the case that a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream, and thus the Office action fails to establish a prima facie case to support this rejection. Accordingly, the applicants respectfully maintain that the rejection of claims 15-16 and 18 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 19

Claim 19 claims a computer readable storage medium including quality information that indicates distortion of the object when the bit-stream is truncated during decoding thereof in relation to the data parts of the coded parts of the bit-stream.

As noted above, there is no apparent reason to combine Park, Nishiwaki, and Simon; the asserted combination of Park, Nishiwaki, and Simon fails to teach generating quality information that indicates distortion of the object when the bit-stream is truncated during decoding thereof in relation to the data parts of the coded parts of the bit-stream; and the asserted combination of Park, Nishiwaki, and Simon does not satisfy the intended purpose of the combination. Accordingly, the applicants respectfully maintain that the rejection of claim 19 under 35 U.S.C. 103(a) over Park, Nishiwaki, and Simon is unfounded, per MPEP 2142, MPEP 2143, and the Supreme Court's opinion in KSR Int'l. Co. v. Teleflex, Inc., and should be reversed by the Board.

Claim 4 stands rejected under 35 U.S.C. 103(a) over Park, Nishiwaki, Simon, and Shin.

Claim 4

Claim 4 is dependent upon claim 1, and in this rejection, the Office action relies upon the combination of Park, Nishiwaki, and Simon for teaching the elements of claim 1.

Because, as noted above, the combination of Park, Nishiwaki, and Simon fails to teach each of the elements of claim 1, and because there is no apparent reason to combine Park, Nishiwaki, and Simon, the applicants respectfully maintain that the rejection of claim 4 under 35 U.S.C. 103(a) that relies on this combination for teaching the elements of claim 1 is unfounded, per MPEP 2142, and should be reversed by the Board.

Claim 8 stands rejected under 35 U.S.C. 103(a) over Park, Nishiwaki, Simon, and Girod.

Claim 8

Claim 8 is dependent upon claim 1, and in this rejection, the Office action relies upon the combination of Park, Nishiwaki, and Simon for teaching the elements of claim 1.

Because, as noted above, the combination of Park, Nishiwaki, and Simon fails to teach each of the elements of claim 1, and because there is no apparent reason to combine Park, Nishiwaki, and Simon, the applicants respectfully maintain that the rejection of claim 8 under 35 U.S.C. 103(a) that relies on this combination for teaching the elements of claim 1 is unfounded, per MPEP 2142, and should be reversed by the Board.

Claims 12 and 17 stand rejected under 35 U.S.C. 103(a) over Park and Nishiwaki.

Claim 12

Claim 12 claims a method that includes receiving quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, and processing the multi-media object in dependence on the extracted quality information.

The combination of Park and Nishiwaki fails to teach or suggest receiving quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, and processing the multi-media object in dependence on the extracted quality information.

The Office action asserts that Park teaches obtaining a desired bitrate and distortion by obtaining "the original magnitudes of the signal represented in the bitstream" (Office action, page 8, lines 8-9). The applicants respectfully maintain that the magnitudes of the signal represented in the bitstream does not correspond to a desired bitrate and distortion. Further, the Office action asserts that this teaching is provided at Park's column 4, lines 50-55:

> "restoring the decoded quantization step size and quantized data into signals having the original magnitudes; and converting inversely quantized signals into signals of a temporal domain." (Park, column 4, lines 50-55.)

As can be seen, the cited text fails to address either a desired bitrate or a desired distortion, and does not teach receiving quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation.

Because Office action fails to show where the combination of Park and Nishiwaki teaches or suggests receiving quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, and fails to teach or suggest processing the multi-media object in dependence on the extracted quality information, the applicants respectfully maintain that the Office action fails to establish a prima facie case to support this rejection. Accordingly, the applicants respectfully maintain that the rejection of claim 12 under 35 U.S.C. 103(a) over Park and Nishwaki is unfounded, per MPEP 2142, and should be reversed by the Board.

Claim 17

Claim 17 claims a receiver that receives quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, and includes means for processing the multi-media object in dependence on the extracted quality information.

As noted above, the Office action fails to show where the combination of Park and Nishiwaki teaches or suggests receiving quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, and fails to teach or suggest processing the multi-media object in dependence on the extracted quality information.

Because the Office action fails to establish a prima facie case to support this rejection, the applicants respectfully maintain that the rejection of claim 17 under 35 U.S.C. 103(a) over Park and Nishiwaki is unfounded, per MPEP 2142, and should be reversed by the Board.

CONCLUSIONS

Because there is no apparent reason to combine Park, Nishiwaki, and Simon, the applicants respectfully request that the Examiner's rejection of claims 1-11, 13-16, and 18-19 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Park, Nishiwaki, and Simon fails to teach each of the elements of independent claims 1, 9, 10, 11, 13, 15, and 19, the applicants respectfully request that the rejections of claims 1-11, 13-16, and 18-19 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Park, Nishiwaki, and Simon will not be satisfactory for its intended purpose, the applicant respectfully requests that the Examiner's rejections of claims 1-8, 10, 13-14, and 19 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Park and Nishiwaki fails to teach each of the elements of independent claims 12 and 17, the applicants respectfully request that the rejections of claims 12 and 17 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted

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CLAIMS APPENDIX

1. A method of coding a multi-media object, the method comprising:

coding the object to obtain a bit-stream having multiple coded parts, each coded part including a header and a data part,

generating quality information which indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream, and

adding the quality information into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream.

2. A method as claimed in claim 1, wherein the coding step is a scalable coding step to obtain a scalable bit-stream.

3. A method as claimed in claim 1, wherein the quality information relates to an object reproduction quality.

4. A method as claimed in claim 3, wherein the quality information is based on a signal to noise ratio value.

5. A method as claimed in claim 1, wherein the quality information is in the form of quality tags which are added at given locations in the bit-stream, the quality tags indicating distortion of the object when the bit-stream is truncated just after (or alternatively just before) the given location in the bit-stream.

6. A method as claimed in claim 1, wherein the quality information is incorporated in existing fields of a given scalable coding standard.

7. A method as claimed in claim 2, wherein the scalable bit-stream includes several layers and wherein respective layers include respective quality information.

8. A method as claimed in claim 1, wherein the bit-stream is encrypted and the quality information is unencrypted.

9. A method of controlling at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream, the method comprising:

receiving the at least one bit-stream,

extracting the quality information from the headers of the coded parts of the bit-stream,

transcoding or truncating the at least one bit-stream in the case a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream,

providing the at least one bit-stream at the desired combination of bit-rate and distortion, and

processing the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point.

10. A method of transmitting at least one multi-media object using a transmitter which generates and transmits a bit-stream which is subsequently reproducible by a reproduction unit or decoder to obtain the multi-media object, the method comprising:

coding the object to obtain the bit-stream having multiple coded parts, each coded part including a header and a data part,

generating quality information which indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream,

adding the quality information into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream, and

transmitting the bit-stream in which the quality information has been added.

11. A method of receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream, the method comprising:

extracting the quality information from the headers of the coded parts of the bit-stream,

transcoding or truncating the at least one bit-stream in the case a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream,

providing the at least one bit-stream at the desired combination of bit-rate and distortion,

decoding the at least one bit-stream at the desired combination of bit-rate and distortion, and

processing the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point.

12. A method of receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts and enabling the multi-media object to be reproduced by a reproduction unit, the quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, the method comprising:

extracting the quality information from the headers of the coded parts of the bit-stream;

decoding the bit-stream to obtain a decoded multi-media object; and

processing the multi-media object in dependence on the extracted quality information obtained from the header of one or more coded parts of the bit-stream whereby the processed multi-media object is reproducible by the reproduction unit.

13. A device for coding a multi-media object, the device comprising:

means for coding the object to obtain a bit-stream having multiple coded parts, each coded part including a header and a data part,

means for generating quality information which indicates distortion of the object when the bit-stream is truncated during decoding in relation to the data parts of the coded parts of the bit-stream, and

means for adding the quality information into the headers of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream.

14. A transmitter comprising a device as claimed in claim 13.

15. A controller for controlling at least one bit-stream representing a multi-media object in which bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream, the controller comprising:

means for receiving the at least one bit-stream,

means for extracting the quality information from the headers of the coded parts of the bit-stream,

means for truncating the at least one bit-stream in the case a desired combination of bit-rate and distortion of the at least one bit-stream differs from a current combination of bit-rate and distortion of the at least one received bit-stream,

means for providing the at least one bit-stream at the desired combination of bit-rate and distortion, and

means for processing the at least one bit-stream in consideration of the quality information obtained from the header of one or more coded parts of the bit-stream near a truncation point.

16. A receiver comprising a controller as claimed in claim 15.

17. A receiver for receiving at least one bit-stream representing a multi-media object in which bit-stream quality information has been added into headers of coded parts of the bit-stream situated before data parts of the coded parts, the quality information indicating distortion of the object in relation to a given position in the bit-stream upon a truncation, the receiver comprising:

means for extracting the quality information from the headers of the coded parts of the bit-stream;

means for decoding the bit-stream to obtain a decoded multi-media object; and

means for processing the multi-media object in dependence on the extracted quality information obtained from the header of one or more coded parts of the bit-stream.

18. A multiplexer or network node comprising a controller as claimed in claim 15.

19. A computer readable storage medium including a bit-stream representing a multimedia object in which bit-stream quality information has been added, the bit-stream having multiple coded parts generated and transmitted by a transmitter and subsequently processable to enable reproduction of the multi-media object by a reproduction unit, each coded part having a header and a data part, the quality information indicating distortion of the object when the bit-stream is truncated during decoding thereof in relation to the data parts of the coded parts of the bit-stream, the quality information being present in the header of the coded parts of the bit-stream such that the quality information is situated throughout the bit-stream.

EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the appellant in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any co-pending appeal or interference that will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.